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BIRD BANDING

Section of Distribution of Birds and Mammals
Branch of Wildlife Research

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HOW DID THEY KNOW?

A native hunter near Cali, Colombia, South America, shot a Pintail duck in January 1940. He was surprised to learn that it had come from North Dakota. Another Pintail was taken on November 15, 1949, at Penrhyn Island of the Northern Cook Islands, by a weather observer who was amazed to find that the bird had been in northern California just three months earlier and had flown over 4,500 miles across the Pacific Ocean. On September 15, 1948, a sportsman shot a Pintail on the River Dart near Dartmouth, England, which 21 days before had been 2,200 miles away on the other side of the Atlantic Ocean at Tinker Harbour, Hamilton Inlet, Labrador.

How did each of these hunters in distant places on the far sides of the Gulf of Mexico, the Atlantic Ocean, and the Pacific Ocean know that his Pintail duck had come from North America?

Each of the ducks carried on its leg an aluminum bracelet or ring on which was stamped a serial number and a legend "Write Fish and Wildlife Service, Washington, D. C., U. S. A." Each of the hunters did just that; each wrote a letter giving the serial number, the date and place the bird was taken, and his own name and address.

This leaflet is a slight revision of WL-235 (November 1951).

On reaching the Fish and Wildlife Service in Washington, D. C., each of the letters was forwarded to the Bird Banding Office, Patuxent Research Refuge, Laurel, Maryland. Clerks consulted the files and found the three numbers among the seven million registered there for the wild birds banded in North America. Letters were prepared and sent back to the hunters telling what kind of bird each had taken, where and when it had been banded, and by whom. A copy of each letter went to the bander to advise him when, where, how, and by whom his bird had been taken. In brief, that is the way the habits of birds are learned through bird banding.

HISTORY

Scientific banding or "ringing" as it is termed in the Old World, dates back to 1899, when a Danish schoolmaster, H. C. C. Mortensen, commenced systematically to band storks, teals, starlings, and two or three species of birds of prey. The success at once attracted the attention of European Ornithologists, and it was not long before bird banding came into prominence. Before World War II, banding was being conducted in many countries of the Old World. Banding programs are still in operation in Belgium, Czechoslovakia, Denmark, Finland, France, Germany, Great Britain, Holland, Hungary, Iceland, Norway, Poland, Russia, Spain, Sweden, Switzerland, Yugoslavia, Egypt, India, Japan, and Australia. Since the war, banding projects have been initiated in Italy, South Africa and New Zealand.

In the New World the possibilities of the method were first brought to the attention of ornithologists by Dr. Leon J. Cole in 1901. Dr. Paul Bartsch of the Smithsonian Institution in June 1902 was the first bander in North America to use numbered metal bands. These were inscribed "Return to Smithsonian." The late P. A. Tavener in 1904 was the first to distribute bird bands by furnishing some 200 hand-made aluminum bands to his correspondents. After the initiation of a few individual projects of this sort, the American Bird Banding Association was organized in December 1909. This society continued to develop the program until 1920 when, having outgrown the resources available, it was taken over by the U. S. Biological Survey (now the Fish and Wildlife Service) as an official research project.

Bird banding in North America is now under the general direction of the Fish and Wildlife Service, U. S. Department of The Interior, and the Canadian Wildlife Service, Department of Northern Affairs and National Resources. In the United States, the Migratory Bird Treaty Act authorizes this function, among other investigations, to obtain information necessary for improving methods of protecting migratory birds and for regulating the migratory game bird hunting seasons.

VALUE OF BANDING

It is the opinion of professional ornithologists throughout the world that bird banding is now the most reliable method of obtaining information about the living bird. In North America today the study of bird distribution by collecting and studying museum specimens is relatively complete as compared with the more detailed information that may be gained by following the movements of individual banded birds.

Banding makes possible the study of individuals and groups of birds of the same species. It is impossible to distinguish between individuals of the same species, unless they are characterized by an odd plumage or an injury. All robins, for example, like all automobiles of a particular make, color, and model, look alike. The band, like the license plate, identifies its bearer.

Much of the present knowledge of migration routes is based directly on data obtained from banding. Information gained in this way is being used and relied upon more and more in the management of the migratory game species.

One of the fascinating questions answered by bird banding is how long do birds live in the wild. For many species there are records of individuals living up to about ten years. A few of the records in excess of ten years are as follows. A Purple Martin was found dead beneath the bird house in which it was banded 14 years earlier. A Red-winged Blackbird banded in New York was shot 14 years later in North Carolina. In Newfoundland a hunter shot a Black Duck banded 17 years earlier, on Cape Cod, Massachusetts. Also on Cape Cod an Arctic Tern was banded on June 25, 1929, recaptured in 1936 and again in 1946, and found freshly dead on July 13, 1951. The longest that a bird has been known to survive in the wild in North America was a Caspian Tern, banded as a nestling on Little Hat Island, near St. James, Michigan, on July 19, 1925, and shot near North Bass Island, Ottawa County, Ohio on August 19, 1951, a full 26 years after banding. There is little doubt that, as banding continues, records of even greater longevity will be obtained.

The Arctic Tern is famous for making the longest annual migration and enjoying the greatest amount of sunlight each year of any living animal. It summers and nests near the Arctic Circle, winters in the Antarctic, and makes a round trip flight of about 25,000 miles each year. This is based on the following six recoveries of bands.

Trans-Atlantic Recoveries of the Arctic Tern

ABBA 1258 banded July 3, 1913, on Eastern Egg Rock, Muscongus Bay, Maine; found dead August 1917 in the Niger River delta, Nigeria, western Africa.

548656 banded June 22, 1927, on Red Islands, Turnavik Bay, Labrador; found dead October 1, 1927, at La Rochelle, western France.

548138 banded July 23, 1928, on Red Islands, Turnavik Bay, Labrador; found dead November 14, 1928, at Port Shepstone, Natal, South Africa.

B-354279 banded July 20, 1935, on Machias Seal Island, New Brunswick; captured October 8, 1935, near St. Nazaire, western France.

47-306032 banded July 5, 1947, on Machias Seal Island, New Brunswick; found dead November 19, 1948, near Wilderness, Cape Province, South Africa.

48-327338 banded July 18, 1948, on Machias Seal Island, New Brunswick; found dead September 1948 near Kylestrome, Sutherland, Scotland.

THE SCOPE OF THE PROGRAM

The number of persons who band birds in North America varies from year to year, but has usually been about two thousand. Most of the banders are located in the United States and Canada, with several in the Hawaiian Islands, some in the West Indies, and a few in areas south of the United States.

Nearly 7,000,000 birds have been banded since the program started, and an additional 300,000 to 400,000 are banded each year. From this total banding, some 600,000 returns and recoveries have been obtained. To date over 600 species have been banded. The species which have been banded in the largest numbers are Mallard, Chimney Swift, Common Tern, Pintail, Herring Gull, Song Sparrow, Robin, Starling, and Purple Grackle.

BANDING OPERATIONS

Various types of cage traps which take the birds alive and without injury are used for capturing birds for banding. These traps are specially designed and carefully tested to insure that no harm will result to the birds, either directly or indirectly, from their operations. To a limited extent nets are used to supplement traps. To Prevent injuries and cause the least interruption in the birds normal life, it is the policy to tend the traps, band, and release the birds the first thing in the morning, at intervals of not more than 3 hours during the day, and just at dusk so no birds remain trapped overnight.

A record of the number of each band; the species, age, and sex of the bird on which it was placed; and the date and place of banding are entered on forms, furnished for the purpose, and forwarded to the Banding Office at prescribed intervals. The Banding Office maintains a record of the person to whom each band was issued. When a report of a band is received the bander's records are examined for information on the particular number. A reply summarizing the banding history of the bird is sent to both the reporter and the bander.

To prevent any confusion in or duplication of the identifying band numbers, the numbers for all bands used on wild migratory birds in North America, by mutual agreement, are assigned and issued by the U. S. Fish and Wildlife Service.

Most banding stations are, in effect, sanctuaries where the birds are provided with protection, food, cover, water and nesting areas. A banding station might be considered as an effective feeding station managed to obtain the greatest amount of information about the birds which frequent it.

BANDS

Fourteen sizes of aluminum bands are now employed in order to provide a proper fit for each of nearly eight hundred species of North American birds. The inside diameters range from .083 inch for size 0 bands, suitable for warblers, kinglets, and other small song birds, up to .875 inch, used on the largest species such as eagles, swans, and pelicans. No band suitable for hummingbirds is manufactured, but by carefully cutting down the size 0 band to fit, several of these diminutive birds have been banded and a few have been recaptured in subsequent seasons.

The bands are of a split-ring type which are described as "butt-end bands". They are opened sufficiently to be placed around the leg and closed again with pliers so that the ends meet evenly and tightly. To obtain a proper fit the band should be just large enough to encircle the leg, rotate freely, and slip up and down without binding. Each bander is provided a list showing the proper size of band for each species. The bands are of aluminum, very small and light as compared with the size and weight of the bird. They do not harm the bird or hinder its movements.

All the official aluminum bands bear a serial number and address. The number on all sizes of bands appears on the outside of the band, but in the smaller sizes, lack of space necessitates the stamping of all or part of the address on the inside of the band.

The addresses which have been and are still used on the bands are:

	Longer Forms	Shorter Forms
(a)	Avise F. and Wildlife Service Write Washington, D. C., USA	Write F & W Serv Wash USA
(b)	Avise Fish & Wildlife Service Write Washington, D. C., USA	Write F & W Serv Wash D. C. USA

In reporting the recovery of bands many persons omit the series designation or prefix. This omission is due in part to assuming that a prefix such as "36" or "48" is a date. There is no correlation between the prefix and the year of banding. The prefix is an essential and integral part of the number without which it is impossible to identify the band. This will readily be seen from the following examples in which the last five digits are identical and only the prefixes are different:

21-78945	48-78945	496-78945
24-78945	50-78945	512-78945
36-78945	53-78945	617-78945

When a serial number is reported without its prefix, it might be any one of 30 or 40 bands. As it cannot be identified, neither the bander nor the finder can be given a report on the band.

ALL PERSONS CAN ASSIST THE PROGRAM

Persons finding banded birds may greatly assist the banding program by reporting by mail every band that comes to their attention. In fact, the program is wholly dependent on the interest and initiative of the finders in reporting the bands.

A practice which frequently yields a band is the examination of the legs of dead and injured birds found along the highway or washed up on the shores. Hunters should always examine the legs of the birds which they take, as banding plays a very important role in the management of their sport. Many reports come from birds accidentally taken in muskrat and beaver traps. Fishermen occasionally catch banded birds in their nets and on their lines. The Chimney Swift which falls in the fireplace or is found in the camp stove may wear a band, as over 500,000 have been banded.

Birds are not the only animal wearing bands. The same bands are used on bats, and have even been tried on the tails of muskrats. Various types of tags, ear clips, and other markers are used on fish, seals, and many other mammals. If there is doubt where they should be reported, all types of bands may be sent to the Fish and Wildlife Service and they will be forwarded to the proper place.

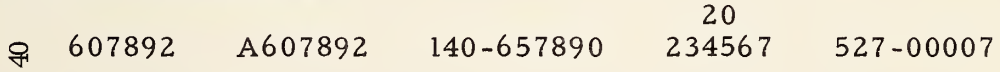
The Service does not maintain files on the bands of racing, homing and fancy pigeons. Such pigeon bands may be sent directly to Mr. George C. Bailey, Radio's Tracer of Lost Pigeons, P. O. Box 499, Huntington, Long Island, New York. All bands from Mourning Doves and other wild migratory doves and pigeons, however, should be reported to the Fish and Wildlife Service.

WHERE AND HOW TO REPORT A BAND

The Service needs to receive complete and accurate reports which are usable and reliable for its research. The person who finds a band wishes to be sure of receiving a report on the history of the bird with the minimum of correspondence and within a reasonable time. To this end the following suggestions for reporting bands are offered:

(a) Write to the: Bird Banding Office
Patuxent Research Refuge
U.S. Fish and Wildlife Service
Laurel, Maryland

(b) Print your full name and permanent address on your letter.
(c) Give the exact date and location (nearest town and county and State or Province) where the bird was found.
(d) State how the bird was obtained (shot, found dead, trapped, etc.). If found dead, indicate how long it had probably been dead.
(e) Print all numbers and letters which appear on the band. The identifying numbers and letters are stamped on the band in the following ways:



All numbers and letters must be reported if the band is to be identified; there are no dates on bands and numbers like "48" do not indicate the year.

(f) If the bird is alive, read the numbers carefully without removing the band and release the bird again with band still attached. In this way there is an opportunity to learn how long the bird lives and where it goes.
(g) If the bird is dead or permanently injured, remove the band, flatten it out, and tape it to your letter. If you desire the band as a souvenir, say so and it will be returned to you after being examined.
(h) Even when the band is enclosed, record the numbers in your letter, because the band might become lost or separated from your letter. Keep a record of the numbers yourself and refer to them in any subsequent correspondence.

FORMS AVAILABLE FOR REPORTING BANDS

The Service provides free a handy single-sheet form which may be used by anyone as a convenient way of reporting the recovery of a bird band. It takes just a few words and a few seconds to fill it in and eliminates the trouble of writing a letter. It assures the Service of obtaining a complete report with all the essential details without further correspondence.

Certain individuals are in position to report several bands each season. Among these are the game wardens, wildlife biologists, refuge managers, operators of hunting clubs and boat liveries catering to hunters, persons who clean game, sporting-good stores, SPCA units, state game department officers, forest rangers, and many others who come in frequent contact with sportsmen who hunt geese, ducks, coot, rail, woodcock, snipe, wild pigeons and doves, and other game birds. These individuals are urged to request and to keep a small supply of the forms on hand during the open hunting seasons.

The forms (3-1807) together with self-addressed return envelopes, which require no postage, may be obtained by writing to the Bird Banding Office, Patuxent Research Refuge, Laurel, Maryland.

ACKNOWLEDGMENTS OF REPORTS

Usually a person who finds a band is interested in learning when and where the bird was banded, how far it had traveled, and how long it had lived. If he cannot recognize the species, he wants to learn its identity.

A special effort is made to acknowledge all reports of bands. This is not always possible for reasons beyond the control of the Service. The most common causes for this are omission of return address, inadequate address, illegible address or signature, and omission of the band numbers. Bands which are enclosed loose or unflattened frequently break out of the envelopes in transit and are lost.

Do not expect an immediate reply. The processing and acknowledging of the report sometimes take considerable time depending on the circumstances. Frequently, the original banding data have not yet come in from the person who banded the bird. In the fall, during the hunting seasons, thousands of letters are received during a relatively short period; far too many for the clerical staff in the Banding Office to handle immediately. A seasonal lag, sometimes of two to three months, develops. Please be patient. If the suggestions above are followed, you will receive an acknowledgment report as soon as it is possible to process the record.

APPLICATIONS FOR PERMITS

Application forms (3-481) for United States bird banding permits may be obtained from the Bird Banding Office, Patuxent Research Refuge, Laurel, Maryland. For a permit to band in Canada, application may be made to the Canadian Wildlife Service, Department of Northern Affairs and National Resources, Ottawa, Ontario, Canada.

The Fish and Wildlife Service and the Canadian Wildlife Service exercise the greatest possible care in selecting cooperators and issuing permits. Every applicant is carefully investigated, not only for general fitness but in particular for ability to identify birds.

It is a cardinal rule of the banding program never to band a bird regarding whose identity there is the slightest doubt. Absolute dependence must be placed on the original identification as the vast majority of the persons who report bands have little knowledge of birds. It is essential that the cooperator be qualified to identify positively the species of birds he may have occasion to band.

Applicants must be at least 18 years old and are asked to furnish the names of at least three references who are well-known ornithologists, naturalists, or banders.

In addition to the Federal permit, a local State permit is required in most States. Federal permits are issued free of charge; a nominal yearly fee is charged by some of the States.

COOPERATIVE PROGRAM

The Fish and Wildlife Service issues the permit, bands, report forms, and instruction manuals to the cooperator without charge and provides envelopes and post cards for submitting reports and requisitioning supplies. The cooperator pays for his own equipment and bait and donates his time.

The program is sponsored and serviced by the Federal Government, because of its great value as a means of obtaining information about migratory birds, necessary for administering this wildlife resource. Banding provides both accurate and quantitative data and is employed as a research tool not only by biologists of the Fish and Wildlife Service, but also by the wildlife technicians of most of the State game departments and by ornithologists engaged in research on the lives and habitats of birds.